

赴日本觀摩收集家禽流行性感冒診斷分工作業及野鳥高病

原性禽流感監測之資訊

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摘要

日本在家禽流行性感冒的防疫上有嚴格的規範，家禽除了不得檢出高、低病原性禽流感病毒外，其血清也不可有禽流感病毒抗體。雖然每年日本仍可在野鳥及家禽發現零星高病原性禽流感案例，但截至目前為止，皆能阻斷疫情擴散並及時將病毒清除。本次訪日行程以野鳥高病原性禽流感監測、疫情爆發時之檢驗分工以及近期禽流感研究工具為主要研習項目。日本動物衛生研究部門(National Institute of Animal Health, NIAH)為主要參訪機構，瞭解 NIAH 使用高通量定序儀在禽流感研究的應用、實驗室選用的前處理方法以及產出結果的分析工具；第二個參訪單位為茨城縣縣北家畜保健衛生所，收集第一線防疫單位在禽流感監測及診斷作業等相關資訊；最後拜訪國立環境研究所(National Institute for Environmental Studies, NIES)，為主導全國野鳥禽流感監測系統的機構。較值得注意的是日本家禽場的監測及診斷業務是直接由各州、道、府、縣之家畜保健衛生所全權負責，除鑑定是否為 H5、H7 亞型禽流感病毒外，還要完成病毒分離以便後送，而該所必須依檢驗結果自行判定畜牧場的防疫處置。如此可減少檢體傳遞花費的時間及避免資訊傳遞錯誤。在野鳥監測方面，日方目前從未在排遺類檢體檢出高病原性禽流感病毒，陽性案例主要是在死亡野鳥個體被發現，且範圍不侷限於遷徙的雁鴨鳥類，同棲地鳥類、猛禽及烏鴉等也是常見的檢出物種。本參訪資訊可作為禽流感防疫的參考資料。

Diagnosis and monitoring of highly pathogenic avian influenza in wild birds in Japan

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Abstract

There are strict regulations on the prevention of avian influenza in Japan. In addition to the regulation that high and low pathogenic avian influenza virus strains must be completely absent in poultry, the presence of avian influenza virus antibodies are also not allowed. Although highly pathogenic avian influenza viruses are still sporadically detected in wild birds and poultry in Japan during the bird migratory season, all of the outbreaks are effectively eliminated. This visit focused on the monitoring scheme for highly pathogenic avian influenza in populations of wild birds, the proper protocols and procedures for diagnosis during outbreaks, and the current methodological tools used in avian influenza research in Japan. The National Institute of Animal Health (NIAH) was the main host institute. At the NIAH, we learned about the application of high-throughput sequencers in avian influenza research, the pretreatment method (unclear what kind of pretreatment method?!), and other related analysis tools. The second visited unit was the Livestock Hygiene Service Center (LHSC) in Ibaraki Prefecture. There, we learned about their monitoring and diagnostic operations for avian influenza as part of many of Japan's first-line of defense disease control units. The third visited site, was the National Institute of Environmental Studies (NIES), which oversees the National Wild Bird Avian Influenza Monitoring Program. It is noteworthy that avian influenza monitoring and diagnostics are carried out by the local LHSC, which determine whether the subtype avian influenza virus is H5 or H7, isolate the viruses, and determine the necessary actions for epidemic prevention. This centralized work-flow procedure cuts down sample transfer times and avoids communication errors. In terms of wild bird monitoring, highly pathogenic avian influenza has never been detected in feces samples from wild birds but primarily within dead birds. The wild birds monitored are not just limited to migratory waterfowl but also other commonly occurring wild bird species in Japan. This report can thus be used as a reference for the effective design of an avian influenza control program in Taiwan.